Yosemite News

National Park Service
U.S. Department of the Interior

The Gin Flat Prescribed Fire

Yosemite National Park undertakes the largest prescribed burn in park history.

After the fire season of 2000, the National Fire Plan was concieved and funded by lawmakers to reduce the threat of catastrophic fires on fire-prone public lands. Public understanding of the problems associated with a 100-year policy of extinguishing all fires has increased dramatically, as devastating fires have swept across Western landscapes in recent years. Yosemite National Park is responding to the growing sense of urgency surrounding this issue by the aggressive use of both fire and mechanical means to reduce a century of fuel accumulation.

On September 27, 2002, park fire managers ignited the largest prescribed fire in park history. The Gin Flat project encompasses nearly 7,300 acres and is located in an area determined to be the most ecologically at-risk from the threat of wildfire. This vast project is expected to continue until significant winter precipitation occurs. This is called a "season-ending enent" by fire managers. Examination of historical weather records indicates over a 90% probability of such an event by the end of October.

The first portion of the burn completed was adjacent to the Yosemite Institute, a non-profit environmental education center. Yosemite National Park has entered into a partnership with the Yosemite Institute to increase fire ecology education. Staff and knowledge are being shared between the two venerable institutions to increase understanding of fire's role in fire-adapted ecosystems.

After this group of buildings was secured, burn personnel turned their attention to igniting the top of the burn along the Tioga Road. Significant smoke impacts to the roadway have occurred and are espected to continue for the duration of the project, so motorists are asked to slow down and pay attention to driving conditions. Traffic control personnel and emergency vehicles will be encountered between Gin Flat and White Wolf. As weather permits, the fire will be allowed to back down slowly into the South Fork of the Tuolumne drainage. Aerial ignition with a helicopter may be used to keep the fire edge even as it cleans the forest floor of woody debris, small trees, and brush – the catalyst for so many recent devastating fires.

Hazardous fuel accumulations being burned under the watchful eyes of professional fire management personnel

By backing the fire slowly down the dense, heavily vegetated north slopes, the fire will not kill the large overstory trees that park visitors from around the world come to see and appreciate. These large fire-resistant old growth trees with their thick bark have endured centuries of frequent fires and will endure to inspire countless generations of future park visitors.

The size and longevity of this project will require the close cooperation of park fire staff and county air quality managers. Daily collaboration will determine how many, if any, acres can be ignited from day-to-day, depending on how well smoke can be ventalated away from populated areas. During periods of high pressure and stagnant air, no additional acres will be ignited. California has long had the most regulated air quality in the United States, due to human-caused pollutants choking metropolitan areas in the 1970's. These regulations are solely focused on human health and have done much to improve air quality over the years, however the recent emphasis on improving forest health through the reintroduction of fire has taxed airsheds, already impacted by heavy industry, agriculture and millions of automobiles. It is important to remember that John Muir's "Range of Light" was often hazy from frequent fires.

Why are today's fires so large and intense?

The mid-elevation ponderosa pine and mixed conifer forest type of the western Sierra Nevada has supported the largest, most devastating fires in recent park history. The A-Rock fire, which can be seen when entering Yosemite Valley from the north, destroyed over 90 structures in Foresta in 1990. Other park fires in the last 10-15 years have burned major portions of this vegetation type, like the Steamboat and Ackerson Fires. These ponderosa pine forests are also where almost all the park infrastructure and nearby communities are located. Several communities are located in or adjacent to the park like Wawona, Foresta, Yosemite West, and Aspen Valley.

Yosemite National Park has been using fire as a resource management tool since the early 1970's. In Yosemite's high country lightning fires are routinely allowed to play out their natural course under the close scrutiny of fire management personnel. Fire behavior in the high elevation red fir and lodgepole pine vegetation type is more manageable than in the drier ponderosa pine forests. Due to the many barren granite areas, the vast majority of these natural fires go out on their own after burning less than an acre. Fire history studies indicate that fire burned every 80-1000 years in this fuel type, so fuel accumulations are not so great.

The effects of unnatural stand-replacing fires have negative impacts on wildlife, soil and air quality, and encourage the spread of non-native plants.

In contrast to the relatively intact high elevation ecosystems capable of supporting a natural fire regime, examination of tree ring records reveal that the ponderosda pine forest type burned every 8-12 years. Consequently, these areas have missed as many as 10 fire cycles in the past century. Imagine what your floor would look like if you forgot to sweep it ten times in a row!

Protecting Communities & Forests

The Gin Flat project was identified as a high priority for many reasons. By completing this burn, a patchwork of burned areas will be completed that protects the entire northwest portion of the park from a wildland fire originating in the park's high country. A prescribed fire was completed in 1997-9 on the north side of the South Fork of the Tuolumne immediately adjacent to the community of Aspen Valley. This burn was also adjacent to the 1996 Ackerson Fire, the largest fire in park history. The Gin Flat burn lies directly south of both these

Prescribed fire consumes surface fuel and small trees, leaving mature old-growth trees intact.

A recent study of park fire history and vegetation was conducted using geographic information system (GIS) technology. This investigation, called a "fire return interval departure" analysis, revealed that much of the project area had not burned in park history, missing five or more fire cycles. From an ecological perspective, this also underscored the need to reintroduce fire into this area. Park fire scientists and restoration ecologists believe that those areas having missed the most fire return intervals should have the highest priority for prescribed fire application. Yosemite National Park recently published a draft Environmental Impact Statement (EIS) for a new Fire Management Plan (FMP). In this long-range planning document, the preferred alternative calls for treatment of 1,800-9,200 acres anually of areas having missed three or more fire return intervals. In addition, at least 1,000 acres per yer of treatments within the wildland urban interface (WUI) is called for under this alternative.

In short, a hundred years of putting out fires in fire-adapted ecosystems cannot be undone in a single human lifetime. For those living near fire-prone environments, thinning and other aggressive treatments will be required. Yosemite National Park will undertake these community protection steps in developed areas, while restoring altered forest ecosystems with prescribed fire at the mid-elevations. Meanwhile, in the high country, where forests are less altered by decades of fire suppression, lightning-caused fires will continue to play out their natural course as a fundamental forest process. Preserving fire as a natural process is as much a part of the National Park Service mission, as maintaining trails and providing visitor services. It is a risk worth taking.

The Gin Flat project will generate significant smoke that may briefly impact a regional area that can be mitigated during times of poor air quality. Smoke from an uncontrolled wildfire, however, may create a much more serious smoke impact lasting months over large parts of the Western United States.